

4.2973       $4.30 \times 10^4$

0.72573       $7.26 \times 10^{-2}$

- - - - -

$6.09 \times 10^5$       6.09000

$4.29 \times 10^{-4}$       609000

.000429

# Dimensional Analysis

## Conversions

mass of 220 Lbs (#)

What's my mass in Kg?

① Lbm = POUND MASS

KNOW

②

$$\frac{1}{220 \text{ Lb}}$$

LOOKING  
FOR

$\rightarrow$  — Kg

### ③ FINDING CONVERSION FACTORS

Lbs is A MASS

$$\boxed{\frac{2.2 \text{ Lbs}}{1 \text{ kg}}}$$

### ④ INSERT CONVERSION FACTOR

$$\frac{220 \cancel{\text{Lbs}}}{1} \times \frac{1 \text{ Kg}}{2.2 \cancel{\text{Lbs}}} = \frac{220 \text{ (Kg)}}{2.2} = 100 \text{ (Kg)}$$

Example 2 What is 55 mph in m/s

$$\frac{55 \text{ miles}}{1} \frac{\text{hr}}{\text{hr}} \times \frac{1.61 \text{ km}}{1 \text{ mile}} \times \frac{1000 \text{ m}}{1 \text{ km}} \times \frac{1 \text{ hr}}{3600 \text{ s}} = \text{m/s}$$

$\frac{\text{miles}}{\text{hr}}$  is a speed

$$\approx 24.6 \text{ m/s}$$

$$\frac{1 \text{ mph}}{1.61 \text{ km/hr}}$$

$$\frac{1 \text{ km}}{1000 \text{ m}}$$

$$\frac{1 \text{ hr}}{3600 \text{ sec}}$$

$$\textcircled{1} \frac{24 \cancel{\text{fl oz}}}{1} \times \frac{29.6 \text{ mL}}{1 \cancel{\text{ fl oz}}} = 710.4 \text{ mL}$$